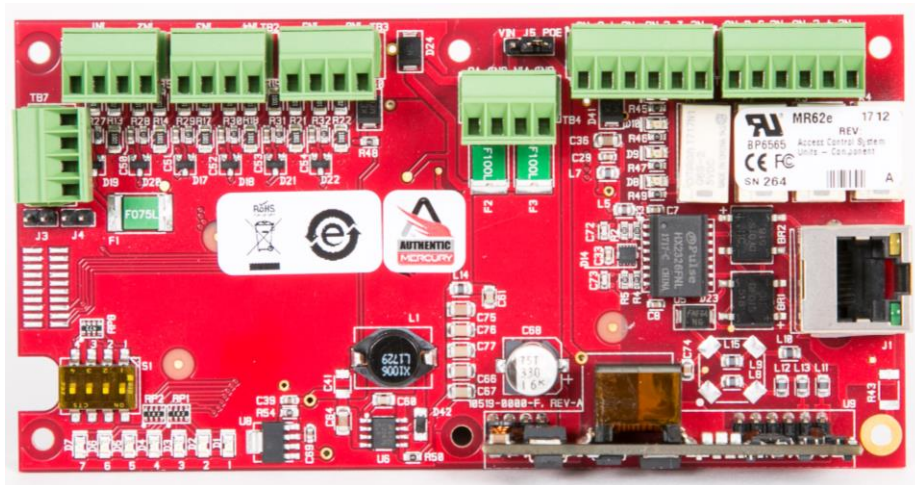


# MAXESS

## eMAX-MR62e OSDP READER INTERFACE MODULE

### *Installation Guide and Specifications*



This device complies with FCC Part 15, Class A Specifications.  
The device meets CE Specifications, and is RoHS Certified.  
This device is UL 294 Recognized.

February 2019

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**Change History:***Original**Document Original**February 2019*

**1. General:**

The eMAX-MR62e OSDP Reader Interface Module provides a network connected interface to control two physical barriers using OSDP readers, and provides a solution for Maxxess Installers/Integrators for interfacing to OSDP readers and door hardware. The on-board Ethernet with PoE/PoE+ support enables easy installation. The eMAX-MR62e supports up to four OSDP readers configured as paired or alternate readers.

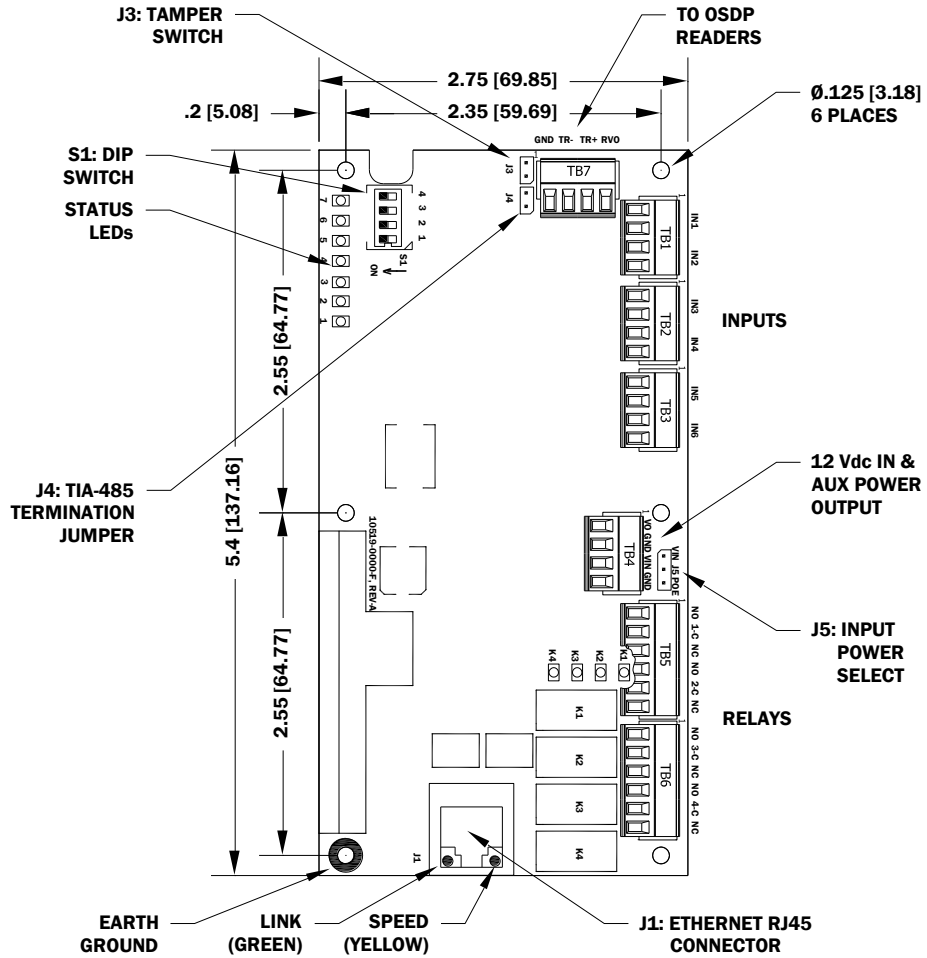


Note: For UL, the Power Sourcing Equipment (PSE) such as a PoE/PoE+ enabled network switch and/or PoE/PoE+ power injectors must be UL Listed under UL294B.

One serial 2-wire RS-485 data communication port is available and can accommodate up to four OSDP readers that are controlling two (2) portals (In/Out paired reader mode). Four Form-C Relay Outputs may be used for door strike control or alarm signaling. The relay contacts are rated at 2 A @ 30 Vdc resistive, and are in a dry contact configuration.

Six inputs are provided that may be used for monitoring the door contacts, exit push buttons, and alarm contacts. Input circuits can be configured as unsupervised or supervised. The eMAX-MR62e requires PoE, PoE+ or local 12 Vdc for power. The eMAX-MR62e may be mounted in a 3-gang switch box with the mounting plate that is supplied with the unit. Or it can be mounted in a standard Maxxess enclosure. The supplied mounting plate has mounting holes that match the MR50 mounting footprint.

## 2. eMAX-MR62e Hardware:



**eMAX-MR62e Layout**

### 3. eMAX-MR62e Terminal Blocks and Jumpers:

MR-51E CONNECTIONS		
TB1-1	IN1	Input 1
TB1-2		
TB1-3	IN2	Input 2
TB1-4		
TB2-1	IN3	Input 3
TB2-2		
TB2-3	IN4	Input 4
TB2-4		
TB3-1	IN5	Input 5
TB3-2		
TB3-3	IN6	Input 6
TB3-4		
TB4-1	VO	Auxiliary Power Output – 12 Vdc
TB4-2	GND	Auxiliary Power Output Ground
TB4-3	VIN	Input Power – 12 Vdc (from local power supply)
TB4-4	GND	Input Power Ground
TB5-1	NO	Relay K1 – Normally Open Contact
TB5-2	1-C	Relay K1 – Common Contact
TB5-3	NC	Relay K1 – Normally Closed Contact
TB5-4	NO	Relay K2 – Normally Open Contact
TB5-5	2-C	Relay K2 – Common Contact
TB5-6	NC	Relay K2 – Normally Closed Contact
TB6-1	NO	Relay K3 – Normally Open Contact
TB6-2	3-C	Relay K3 – Common Contact
TB6-3	NC	Relay K3 – Normally Closed Contact
TB6-4	NO	Relay K4 – Normally Open Contact
TB6-5	4-C	Relay K4 – Common Contact
TB6-6	NC	Relay K4 – Normally Closed Contact
TB7-1	GND	Reader Power Ground
TB7-2	TR-	2-Wire RS-485 TR- (B) See Note 1 below
TB7-3	TR+	2-Wire RS-485 TR+ (A) See Note 1 below
TB7-4	RVO	12 Vdc Reader Power Output

**Note 1:** Terms A & B are from the RS-485 standard

### Jumpers and Jacks:

JUMPER	SET AT	DESCRIPTION
J1	N/A	Ethernet Connection with PoE/POE+ support
J2	N/A	Factory Use Only
J3	N/A	Tamper Switch (normally open contact) See section 14.
J4	N/A	RS-485 Termination, install only if the MR62e is at the end of the communication bus
J5	PoE	MR62e powered from the Ethernet connection
	VIN	MR62e powered from an external 12 Vdc power source connected to TB4-3 (VIN), TB4-4 (GND)
J6 – J13	N/A	Factory Use Only

### DIP Switches:

The four switches on S1 DIP switch configure the operating mode of the eMAX-MR62e Module. DIP switches are read on power-up except where noted.

1	2	3	4	Definitions
OFF	OFF	OFF	OFF	Normal operating mode.
ON	X	OFF	OFF	After initialization, enable default User Name (admin) and Password (password). The switch is read on the fly, no need to re-boot. See IT Security section for additional information.
OFF	ON	OFF	OFF	Use factory default communication parameters.
ON	ON	OFF	OFF	Use OEM default communication parameters. Contact system manufacture for details. See Bulk Erase section below.
ON	ON	OFF	OFF	Bulk Erase prompt mode at power up. See Bulk Erase below.

All other switch settings are unassigned and reserved for future use. (X = don't care)

### Factory Default Communication Parameters:

Network: static IP address: 192.168.0.251

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.0.1

## 4. Bulk Erase Configuration Memory:

The bulk erase function can be used for the following purposes:

- Erase all configuration, sets MR62e to OEM setting (sanitize board).
- Restore to OEM default parameters.

Bulk Erase Steps: **Do not remove power during steps 4-6.**

1. Set S1 DIP switches to: 1 & 2 "ON", 3 & 4 "OFF".
2. Apply power to the MR62e.
3. Watch for LEDs 1 & 2 and 3 & 4 to alternately flash at a 0.5 second rate.
4. Within 10 seconds from applying power, change switches 1 or 2 to "OFF". If these switches are not changed, the MR62e will power up using the OEM default communication parameters.
5. LEDs 1 and 2 alternately flash at a 0.5 second rate while the memory is being erased.
6. Once the memory is eased, LED 1 will be on for about 3 seconds, then the eMAX-MR62e will reboot.

### 5. Input Power:

The eMAX-MR62e is powered by one of two ways (jumper selected, J5):

- Power is supplied via the Ethernet connection using PoE or PoE+.
- Local 12 Vdc power supply, TB4-3 (VIN), TB4-4 (GND).

### 6. Communication Wiring:


Communication between the LP/ EP controller and the eMAX-MR62e is Ethernet (10Base T/100Base-TX).

It is not recommended to connect the eMAX-MR62e to a public intranet.

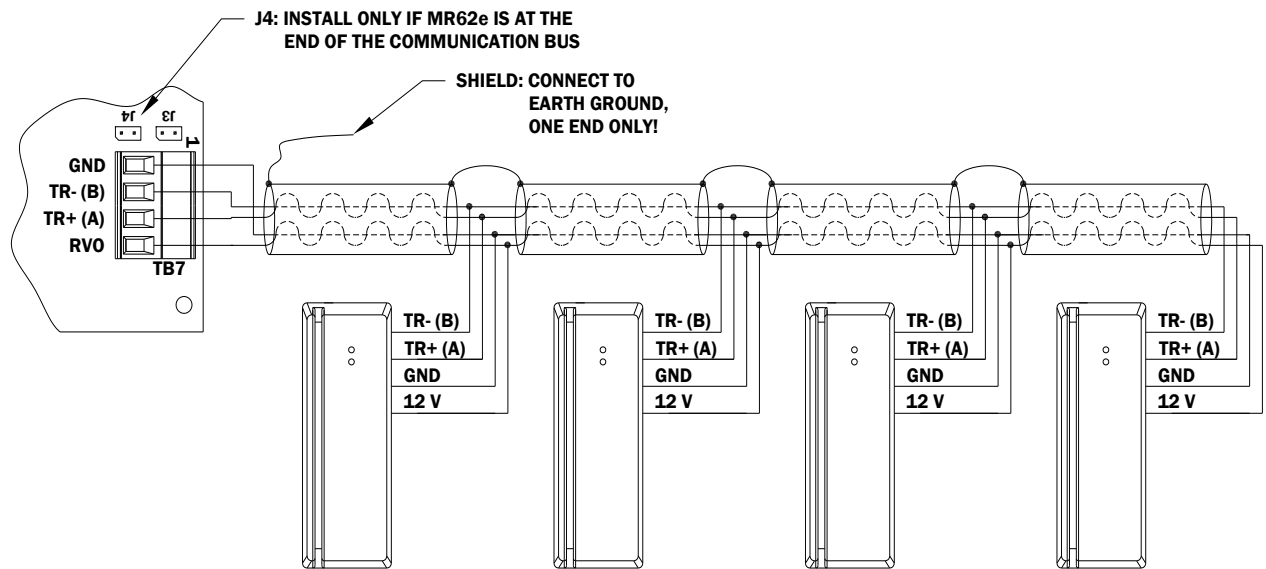
### 7. OSDP Reader Wiring:

Connector TB7 of the eMAX-MR62e Module has connections for the 2-wire RS-485 OSDP communication bus as well as 12 Vdc to power the OSDP readers. Up to four (4) OSDP readers are supported on the eMAX-MR62e. The four (4) Readers can be used to control two (2) Doors/Portals in an In/Out (paired) Reader mode for each door. The 12 Vdc output is limited to .5 A maximum. The OSDP reader wiring diagram below shows the use of a 2-pair cable for data and power. If this cable cannot support the voltage/current requirements, a 1-pair cable of sufficient gauge must be used for power. See specification section.

The RS-485 termination jumper, J4, is only installed if the eMAX-MR62e is at one end of the communication bus. Only devices at each end of the communication bus are terminated. Never install termination to more than two devices on the communication bus.

 *When powering any remote device(s) by the eMAX-MR62e, care must be taken not to exceed the maximum current available. Cable gauge must also be evaluated. See specifications section for details.*

#### Reader Wiring Diagram:



**Typical OSDP Reader Wiring**

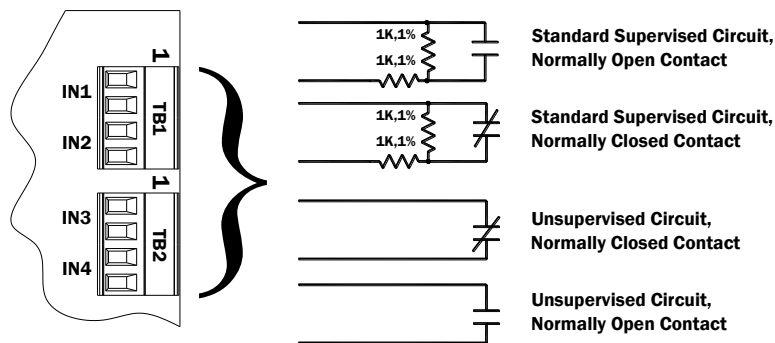
### 8. Input Circuit Wiring:

The eMAX-MR62e provided Six (6) inputs that are typically used to monitor door position, request to exit, or alarm contacts. Input circuits can be configured as unsupervised or supervised. When unsupervised, reporting consists of only the open or closed states.

When configured as supervised, the input circuit will report not only open and closed, but also open circuit, shorted, grounded\*, and foreign voltage\*. A supervised input circuit requires two resistors be added to the circuit to facilitate proper reporting. The standard supervised circuit requires dual 1K Ohm, 1% resistors and should be located as close to the sensor as possible. Custom end of line (EOL) resistances may be configured via the host software.

**NOTE: Grounded and foreign voltage states are not a requirement of UL 294 and therefore not verified by UL.**

The input circuit wiring configurations shown are supported but may not be typical:

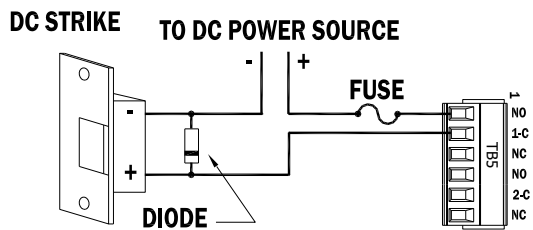


### 9. Relay Circuit Wiring:

The eMAX-MR62e includes four (4) relays with Form-C contacts (dry) that provide for controlling door lock mechanisms or alarm signaling. Each relay contact is rated at 2A @ 30Vdc resistive. When controlling the delivery of power to the door strike, the Normally Open and Common poles are typically used. When momentarily removing power to unlock the door, as with a mag lock, the Normally Closed and Common poles are typically used. Check with local building codes for proper egress door installation.

Door lock mechanisms can generate feedback to the relay circuit that can cause damage and premature failure of the relay. For this reason, it is recommended that a diode be used to protect the relay. Wire should be of sufficient gauge to avoid voltage loss.

**!** It is possible for the eMAX-MR62e to provide power for a 12 Vdc door strike providing the maximum current is not exceeded. See specification section.



#### DIODE SELECTION:

DIODE Current Rating > 1 X STRIKE CURRENT  
 DIODE Break Down Voltage: 4X STRIKE VOLTAGE  
 FOR 12VDC or 24VDC STRIKE, DIODE 1N4002  
 (100V /1A) TYPICAL



## 10. Status LEDs:

At Power-up, LED 1 turns ON then LEDs 2 through 7 are turned ON then OFF in sequence.

The following table describes the LED's in the Normal Running mode:

LED	DESCRIPTION
1	On-line = four pulses per second; 0.1 second ON, 0.1 second OFF, OFF for .3 seconds
	Off-line: 0.2 second ON, 0.8 second OFF
	Waiting for application firmware to be downloaded: .1 sec ON, .1 sec OFF
2	Input IN1 Status: OFF = Inactive, ON = Active, Flashing = Fault. See note 2
3	Input IN2 Status: OFF = Inactive, ON = Active, Flashing = Fault. See note 2
4	Input IN3 Status: OFF = Inactive, ON = Active, Flashing = Fault. See note 2
5	Input IN4 Status: OFF = Inactive, ON = Active, Flashing = Fault. See note 2
6	Input IN5 Status: OFF = Inactive, ON = Active, Flashing = Fault. See note 2
7	Input IN6 Status: OFF = Inactive, ON = Active, Flashing = Fault. See note 2
J1-YELLOW	Ethernet speed: OFF = 10 Mb/S, ON = 100 Mb/S
J1-GREEN	OFF = No Link, ON = Good Link, Flashing = Ethernet Activity

**Note 2:** If this input is defined, every three seconds the LED is pulsed to its opposite state for 0.1 second, otherwise, the LED is off.

## 11. IT Security

When installing the eMAX-MR62e, it is important to ensure that it is done in a secure manner.

Upon installation, the user accounts to the web configuration page should be created with secure passwords, and that all DIP switches are in the off position for the normal operating mode. The eMAX-MR62e is shipped from the factory with a default login account, which is enabled when DIP 1 is moved from OFF to ON. The default login user name and password will be available for five minutes once enabled. Therefore, it is important that at least one user account is defined, and the DIP switches are set to OFF before the MR62e is commissioned. It is also highly recommended not to configure the MR62e with an IP address that is accessible from the public Internet.

To further enhance network security, options are available to disable Zeroconf discovery, as well as the web configuration module itself.

## 12. Specifications:

The eMAX-MR62e is for use in low voltage, Class 2 circuits only.

Power Input: PoE (12.95 W), compliant to IEEE 802.3af  
or  
PoE+ (25 W), compliant to IEEE 802.3at  
or  
12 Vdc  $\pm$ 10 %, 1.7 A maximum



*For UL, the Power Sourcing Equipment (PSE) such as a PoE/PoE+ enabled network switch and/or PoE/PoE+ power injectors must be UL Listed under UL294B. Wiring for the 12V input shall not extend more than 30m from the product.*

Power Output: PoE: VO (TB4-1) and RVO (TB7-4), combined: 12 Vdc @ .66 A maximum  
PoE+ or 12 Vdc: VO (TB4-1) 12 Vdc @ 1 A maximum, RVO, (TB7-4) 12 Vdc @ .5 A maximum

Output: Four relays, Form-C contacts rated at 2 A @ 30 Vdc

Inputs: Six unsupervised/supervised, End of Line resistors, 1k/1k ohm, 1%, ¼ watt standard

### Reader Interface:

Power: 12 Vdc @ .5 A maximum (RVO, TB7-4)

Communication: 2-Wire RS-485, OSDP protocol, four devices maximum

### Cable Requirements:

Communication: Ethernet, Category 5, minimum

External Input Power: 1 twisted pair, 18 AWG (if required)

Alarm Inputs: 1 twisted pair per input, 30 ohm maximum

Relay Outputs: As required for the load

Reader Data and Power\* RS-485/power: 2 twisted pair with shield, 24 AWG, 120 ohm impedance 4000 foot (1220 m) maximum.

or

RS-485: 1 twisted pair with shield, 24 AWG, 120 ohm impedance, 4000 foot (1220 m) maximum

and

power: 1 pair 18 AWG\*

*\* Type of cable(s) and gauge determined by length and voltage/current requirements. Local power source may be required.*

### Environment:

Temperature: -55 to +85 °C, storage  
0 to +70 °C, operating

Humidity: 5 to 95 % RHNC

**Mechanical:**

Dimension: 5.5 in. (140 mm) W x 2.75 in. (70 mm) L x 0.96 in. (24 mm) H without bracket  
 5.5 in. (140 mm) W x 3.63 in. (92 mm) L x 1.33 in. (34 mm) H with bracket

Weight: 4 oz. (112 g) without bracket  
 5 oz. (142 g) with bracket

**UL294, 6<sup>th</sup> edition Performance Levels:**

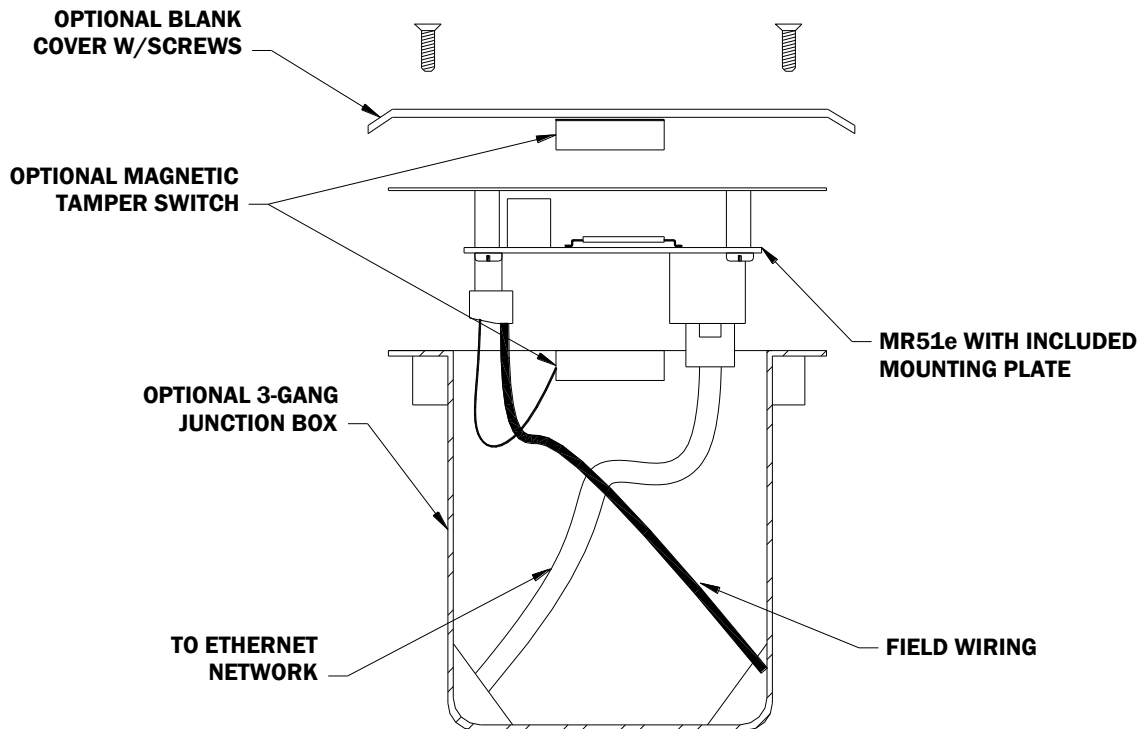
<u>Feature</u>	<u>Level</u>
Standby Power	I
Endurance	IV
Line Security	I
Destructive Attack	I

**13. Additional Mounting information:**

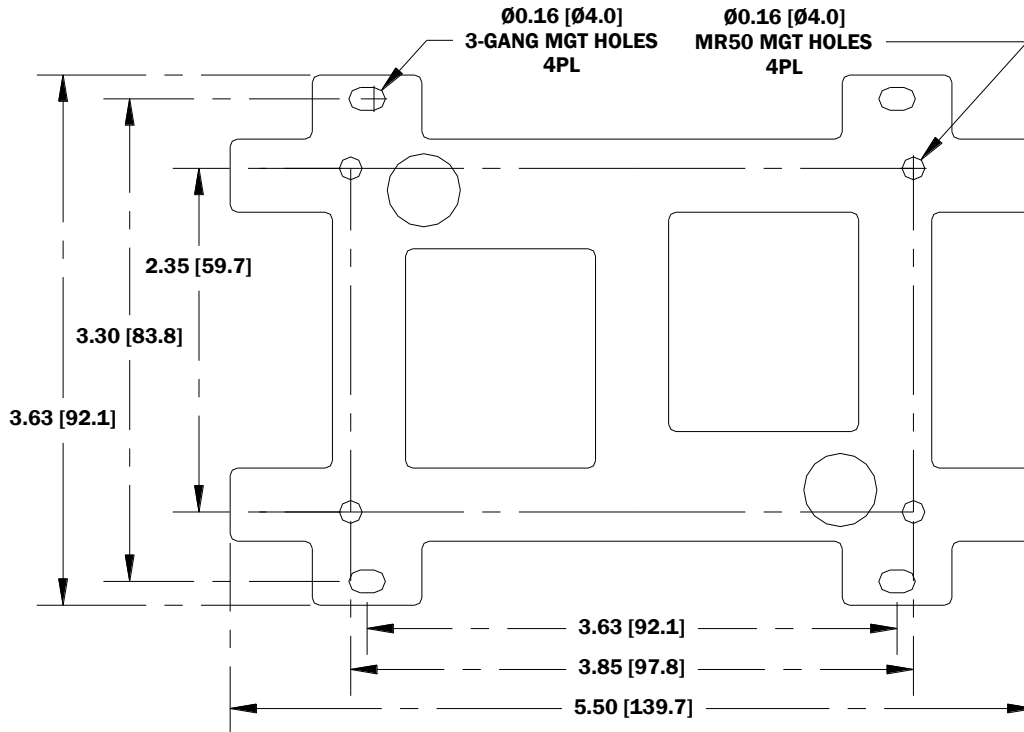
Sources for the optional items shown below:

- 3-gang stainless steel blank cover. Available from:  
 Leviton part number 84033-40  
 Graybar part number 88158404
- Magnetic switch set: G.R.I. part number: 505

**Side View:**



### Mounting Plate Dimensions:



## 14. Warranty

Maxxess Systems, Inc. warrants this product is free from defects in material and workmanship under normal use and service with proper maintenance for one year from the date of factory shipment. Maxxess Systems, Inc. assumes no responsibility for products damaged by improper handling or installation. This warranty is limited to the repair or replacement of the defective unit.

There are no expressed warranties other than set forth herein. Maxxess Systems, Inc. does not make, nor intends, nor does it authorize any agent or representative to make any other warranties, implied or otherwise, and expressly excludes and disclaims all implied warranties of merchantability or fitness for a particular purpose.

Returned units are repaired or replaced from a stock of reconditioned units. Returns must be accompanied by a return authorization number (RMA) obtained from customer service, and prepaid postage and insurance.

### Liability

The Interface should only be used to control exits from areas where an alternative method for exit is available. This product is not intended for, nor is rated for operation in life-critical control applications. Maxxess Systems is not liable under any circumstances for loss or damage caused by or partially caused by the misapplication or malfunction of the product. Maxxess Systems liability does not extend beyond the purchase price of the product.

## Appendix A - Configuring the eMAX-MR62e

The eMAX-MR62e local controllers include an internal web page for configuring the communication parameters of the device. It is recommended that the device be preconfigured in a controlled environment before installing the device on site.

Default IP is 192.168.0.251

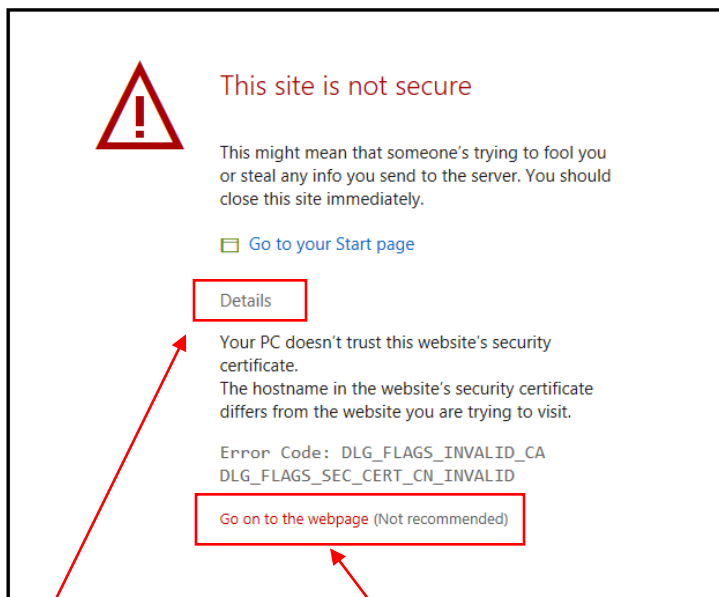
Default user and password is **admin** and **password**

Configuration of the eMAX-MR62e controller requires the following information.

- **IP Address**        \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_
- **Subnet Mask**    \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_
- **Gateway IP**     \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

### Connecting to the eMAX-MR62e local controller

1. Connect the device to a computer using a standard network cable.
2. Set the computer's IP to a Static IP Address of 192.168.0.10.
3. At the eMAX-MR62e Module, be sure to turn dipswitch #1 to the ON position. This enables the use of the DEFAULT Login credentials, and will time out in 5 minutes.
4. Connect to the device from your browser using <http://192.168.0.251>. The following screens will appear.



This message may be different, depending on the version of Operating System that you have installed.

First Click on “ Details “, which will tell you that your PC does not recognize the Web Pages’s Security Certificate. This is Normal. Then click on “ Go on to the webpage “.

The Login Screen will then appear:

## eMAX-MR62e Configuration Manager

### Login

Enter your user name and password.

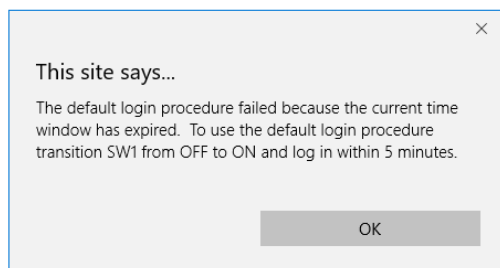
Username:

Password:

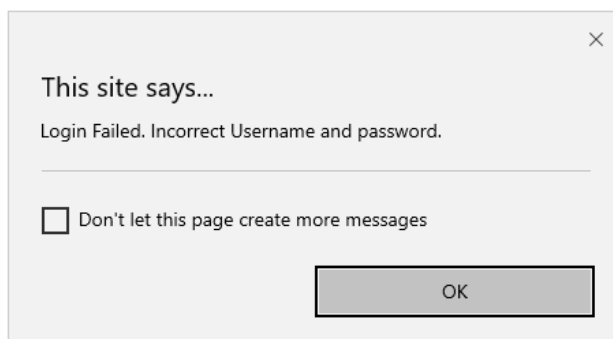
Login

Login using username '**admin**' and password '**password**'.

The following message will appear if you FAILED to turn Switch #1 to ON, or if 5 minutes have elapsed since turning switch #1 to ON.



If you entered the incorrect UserName or Password, you will see the Login Screen display "Login Failed", and you should click on "Retry".



After logging in with the correct UserName and Password, the following screen should be displayed:

**eMAX-MR62e Configuration Manager**

**Network Settings**

- Network
- Device Info
- Users
- Apply Settings
- Log Out

Host Name:   
(only 0-9, a-z, A-Z, ,(period), -(hyphen) are allowed)

Use DHCP method to obtain IP address automatically

Use Static IP configuration:

IP Address:

Subnet Mask:

Default Gateway:

(Select Apply Settings to apply changes)

Click on the **Network** page to configure the IP parameters. Click on the “Use Static IP configuration” circle to enable the configuration and use of the Static IP addressing.

**eMAX-MR62e Configuration Manager**

**Network Settings**

- Network
- Device Info
- Users
- Apply Settings
- Log Out

Host Name:   
(only 0-9, a-z, A-Z, ,(period), -(hyphen) are allowed)

Use DHCP method to obtain IP address automatically

Use Static IP configuration:

IP Address:

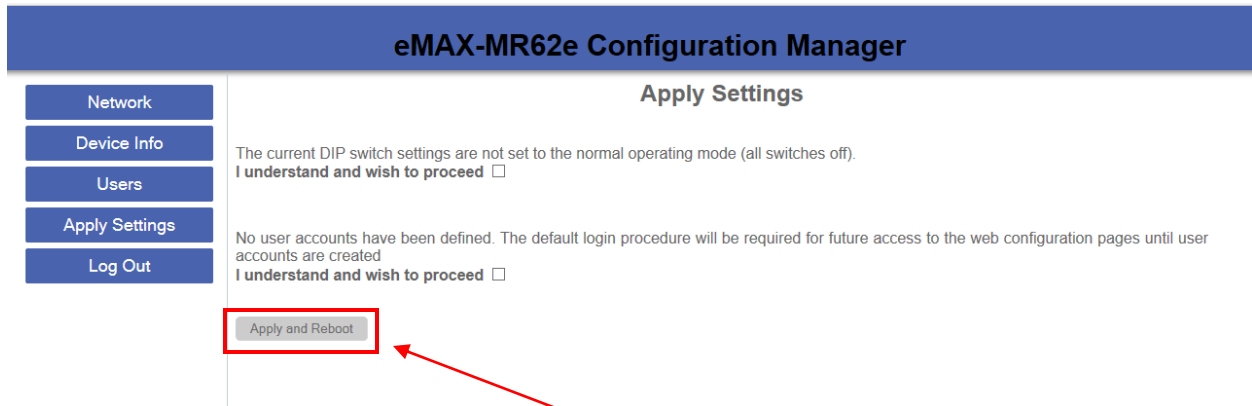
Subnet Mask:

Default Gateway:

(Select Apply Settings to apply changes)

Configure the required IP Address, Subnet Mask, Default Gateway (as applicable) for the eMAX-MR62e. To SAVE, Click on “Accept” button, then select the **Apply Settings** button

You should then see:

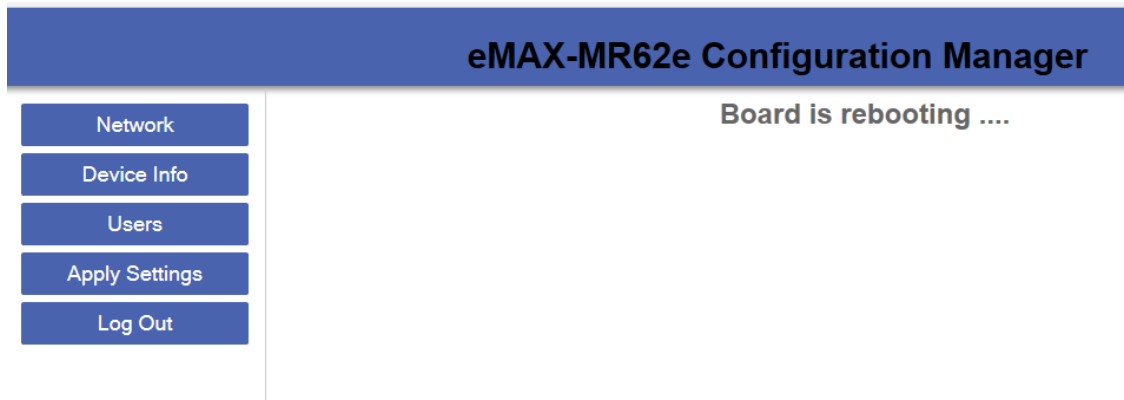


The first check box is telling you that the Dip Switch settings must be reset to off.

The 2<sup>nd</sup> check box is telling you that no special User Accounts were defined.

If you wish to proceed, check both of the check boxes, then click on the “Apply and Reboot” box to proceed.

You should see a message that says “**Board is rebooting**”.



You can then logout.

*Remember that you should ALWAYS create a USER Account. When a new user is added, it disables the default admin user. It is strongly recommended that a new user account be added during this configuration process. Browse to the **Users** link and add a user. If the new user details are ever lost, the controller dipswitch S1 may be used to re-enable the default user.*